

Checklist for Exam 2

Chapter 3. Formulas, Equations and Moles

- I recognize different ways molecules can be represented, including the ball-and stick model, the formula, the pressed-together-spheres model, and the atomic symbol and line model (Section 3.1)
- I can write and balance chemical equations. I use the link method to help balance harder equations. (Section 3.2)
- I can write an equation from the words for formulas. (Section 3.2 and Chapter 2 Nomenclature)
- I can calculate the molar mass of a compound. (Section 3.3)
- I can convert mass to moles and moles to mass for any substance. (Section 3.3)
- Go Moles!** I can calculate the number of moles of a reagent needed to react completely with a given number of moles of another reagent. I can do the same starting with masses instead of moles. (mass of A \rightarrow moles of A \rightarrow moles of B \rightarrow mass of B) (Section 3.3)
- I can calculate the theoretical yield of a product given the mass or moles of a reactant. I know that theoretical yield can be expressed in either moles or grams. (Section 3.3)
- I know the formula for percent yield. I can calculate percent yield given theoretical yield and actual yield, or given percent yield and theoretical yield, I can calculate actual yield. (Of course, usually, I will have to calculate theoretical yield when needed.) (Section 3.4)
- I can determine the limiting reagent. To do so, I must **Go Moles!** and then divide each by the coefficient and compare; the smaller number points to the LR. (Section 3.5)
- Once I've determined the limiting reagent, I can calculate how much (in moles or mass) of the other reagent is left over. This is like a theoretical yield calculation. (Section 3.5)
- I can determine the percent composition and empirical formula of a compound. (Section 3.6)
- I can use combustion analysis data to obtain the empirical formula of a compound containing carbon, hydrogen, and one other element. (Section 3.7)
- I can use the empirical formula and molar mass (by mass spectroscopy, for example) to determine the molecular formula of a compound. (Section 3.8)

General skills:

- I can do the "picture problems" — usually best done by rendering them into word problems.
- I can perform all of the calculations and problems we've seen on the in-class daily homework.
- I can answer questions about the demonstrations we have seen in class.